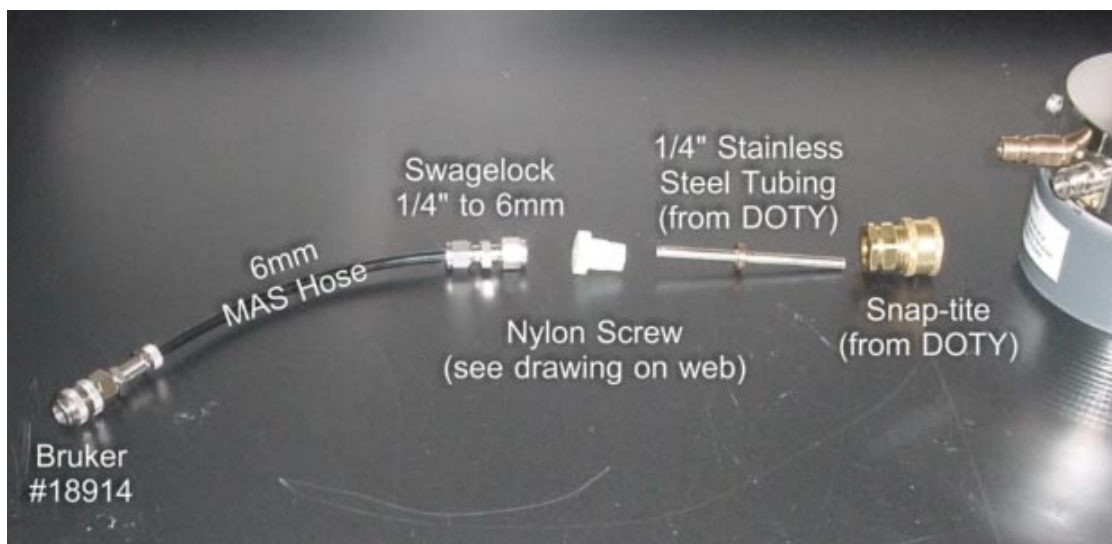


# MAS Air Line Modification: Bruker to Doty Conversion

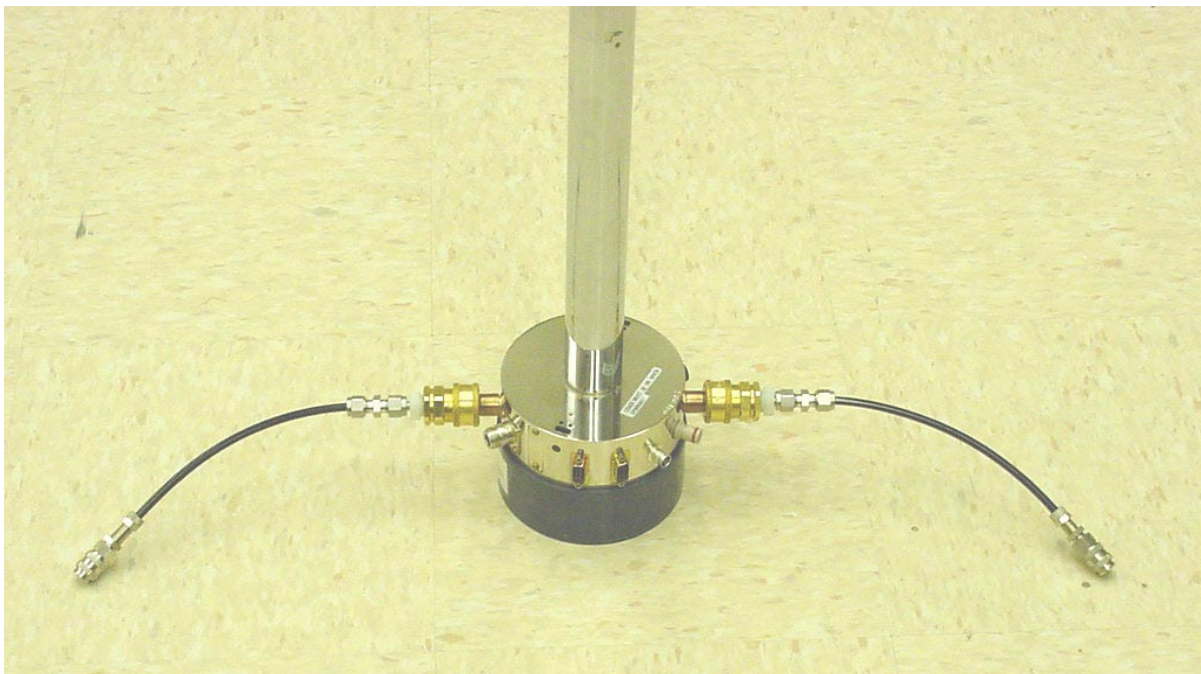
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A Doty XC4 triple resonance MAS probe was part of the package for the Bruker Avance 600 spectrometer recently installed in our laboratory. In an attempt to simplify the probe setup, reduce the number of MAS air lines, and utilize the Bruker MAS controller we have made the modification to the MAS air line connections described below. The modification simply consists of a short section that directly connects the existing quick connects on the Bruker MAS air lines (European) to the Snap-tite Inc. fitting provided with the Doty MAS probe. The modification required the machining of only one nylon screw-in bushing, while the remainder of the pieces were obtained from either Swagelock, Bruker or Doty or the quick connects available from Bruker. Fig. 1 shows the exploded view of the air line modification, while Fig. 2 shows the completed setup attached to the MAS probe. This modification now allows the Bruker MAS lines to be used for the drive and bearing control of the Doty probe. Depending on your configuration, the Bruker bearing pressure sense line may also need to be included in the modification of the bearing air MAS line. Additional details, including a CAD drawing of the nylon bushing, will also be available on our lab web site in the near future ([http://www.sandia.gov/materials/sciences/nmr\\_lab](http://www.sandia.gov/materials/sciences/nmr_lab)).



**Figure 1:** Exploded view of the Bruker to DOTY MAS conversion. The Bruker quick connect (#18914) directly attaches to the existing MAS bearing and drive lines.



**Figure 2:** The final assembly showing the bearing and drive line modifications on the Doty triple resonance MAS probe. An additional bearing pressure sense connection may be required for correct functioning of the Bruker MAS controller depending on your configuration. Manual control of the bearing and drive pressure via the MAS controller is required for the Doty probes as the pressures ranges for stable spinning are different than those encountered for the Bruker MAS probes.